

Patent claims

1. Method for the operation of a transfer printing station (3, 3a, 3b) of an electrographic printing device (21), whereby the transfer printing station (3, 3a, 3b) comprises a light-sensitive medium (5) on which successive toner images adhere by means of electrostatic forces that are effected via an electrical potential as well as a transport band (4) on which, for the purpose of transfer printing of the toner images from the light-sensitive medium (5) onto successive sheet-form recording media (1, 1a, 1b), the respective recording medium (1, 1a, 1b) to be printed is held by means of electrostatic forces and the transfer printing occurs by means of the electrostatic forces that is [sic] effected by an electrical transfer printing potential opposite the potential of the toner image, whereby the electrical transfer printing potential is dissipated while the light-sensitive medium (5) passes an intervening space (a, gap) lying between two recording media (1, 1a, 1b), and whereby a toner marking is generated on the light-sensitive medium (5).
2. Method according to claim 1, whereby a control device (18) is used that, from the image sequence of the electrographic recording process, derives at which times no recording medium (1, 1a, 1b) lies against the light-sensitive medium (5) and then effects the dissipation of the transfer printing potential.
3. Method according to claim 1 or 2, whereby the transport band (4) has an electrical volume resistance greater than $10^{10} \Omega \text{ cm}$, whereby the transfer printing potential also effects the electrostatic forces to hold the recording medium (1, 1a, 1b).

4. Method according to any of the claims 1 through 3, whereby a cleaning station (9) that cleans off residual toner that is not transfer-printed is provided on the light-sensitive medium (5).
- 5 5. Method according to claim 4, whereby the cleaning station (9) comprises a discharge device (9a) charged with alternating current and/or a mechanically-contacting cleaning element (11) that permanently lies on the light-sensitive medium.
- 10 6. Method according to claim 5, whereby the mechanically-contacting cleaning element (11) is a rubber lip.
7. Method according to one of the claims 5 or 6, whereby the cleaning station (9) comprises a residual toner reservoir (12, 14) that accepts the toner particles cleaned off from the light-sensitive medium (5), and whereby a toner quantity sensor (15) is provided that emits a "full" signal when a predetermined quantity of toner particles is reached in the residual toner reservoir (14).
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- 20 8. Method according to claim 7, whereby a conveying device (13) is provided via which cleaned-off toner particles are transported into the residual toner reservoir (14).
9. Method according to any of the preceding claims, whereby residual toner is continuously mechanically loosened from the transport band (4) via a cleaning device (16) provided on the transport band (4) and falls into a residual toner reservoir (17) associated with the transport band (4).
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10. Method according to claim 9, whereby the cleaning device (16) provided on the transport band (4) comprises a flexible blade or a rigid ceramic blade (16).
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11. Method according to one of the claims 7 or 8 and according to one of the claims 9 or 10, whereby after emission of the “full” signal of the toner quantity sensor (15), both the residual toner reservoir of the cleaning station
5 of the light-sensitive medium (14) and the residual toner reservoir of the transport band (17) are emptied or exchanged for an empty reservoir.
12. Method according to any of the preceding claims, whereby a rotating photoconductor drum whose circumferential velocity given transfer
10 printing is the same as the transport speed of the transport band (4) is used as a light-sensitive medium (5).
13. Transfer printing station (3, 3a, 3b) for an electrographic printing device (21), comprising a light-sensitive medium (5) on which successive toner
15 images can adhere by means of electrostatic forces that are effected via an electrical potential as well as a transport band (4) on which, for the purpose of transfer printing of the toner images from the light-sensitive medium (5) onto successive sheet-form recording media (1, 1a, 1b), the recording
medium (1, 1a, 1b) can be held by means of electrostatic forces, whereby
20 the transfer printing occurs by means of the electrostatic forces that is [sic] effected by an electrical transfer printing potential opposite the potential of the toner image, and whereby a control device (18) is provided via which the electrical transfer printing potential can be deactivated while an
intervening space (gap) lying between two recording media (1, 1a, 1b)
25 passes the light-sensitive medium.
14. Transfer printing station according to claim 13, whereby, from the image sequence of the electrographic recording process, the control device (18)
30 derives at which times no recording medium (1, 1a, 1b) lies against the light-sensitive medium (5) and then effects the dissipation of the transfer printing potential.

15. Transfer printing station according to claim 13 or 14, whereby the transport band (4) has an electrical volume resistance greater than $10^{10} \Omega \text{ cm}$, whereby the transfer printing potential also effects the electrostatic forces to hold the recording medium (1, 1a, 1b).
16. Transfer printing station according to any of the claims 13 through 15, whereby a cleaning station (9) that cleans off residual toner that is not transfer-printed is provided on the light-sensitive medium (5).
17. Transfer printing station according to claim 16, whereby the cleaning station (9) comprises a discharge device (9a) charged with alternating current and/or a mechanically-contacting cleaning element (11) that permanently lies on the light-sensitive medium.
18. Transfer printing station according to claim 17, whereby the mechanically-contacting cleaning element (11) is a rubber lip.
19. Transfer printing station according to one of the claims 17 or 18, whereby the cleaning station (9) comprises a residual toner reservoir (12, 14) that accepts the toner particles cleaned off from the light-sensitive medium (5), and whereby a toner quantity sensor (15) is provided that emits a "full" signal when a predetermined quantity of toner particles is reached in the residual toner reservoir (14).
20. Transfer printing station according to claim 19, whereby a conveying device (13) is provided via which cleaned-off toner particles are transported into the residual toner reservoir (14).
21. Transfer printing station according to any of the preceding claims, whereby residual toner is continuously mechanically loosened from the transport

band (4) via a cleaning device (16) provided on the transport band (4) and falls into a residual toner reservoir (17) associated with the transport band (4).

- 5 22. Transfer printing station according to claim 21, whereby the cleaning
device (16) provided on the transport band (4) comprises a flexible blade or
a rigid ceramic blade (16).
- 10 23. Transfer printing station according to one of the claims 19 or 20 and
according to one of the claims 21 or 22, whereby both residual toner
reservoirs (14, 17) are fashioned such that, after emission of the “full”
signal of the toner quantity sensor (15), both the residual toner reservoir of
the cleaning station of the light-sensitive medium (14) and the residual
toner reservoir of the transport band (17) can be emptied or exchanged for
15 an empty reservoir.
- 20 24. Transfer printing station according to any of the preceding claims, whereby
a rotating photoconductor drum whose circumferential velocity given
transfer printing is the same as the transport speed of the transport band (4)
is used as a light-sensitive medium (5).